

Fig. 1

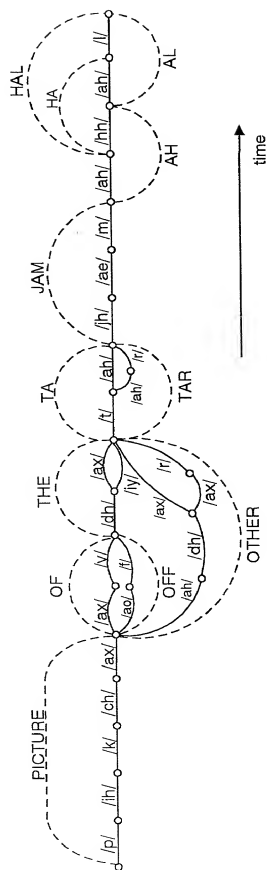


Fig. 2

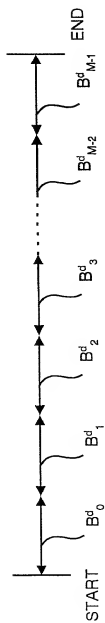


Fig. 3a

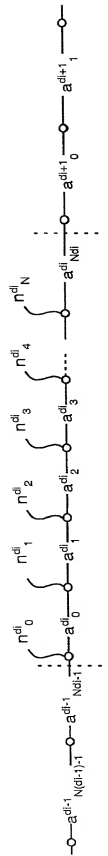


Fig. 3b

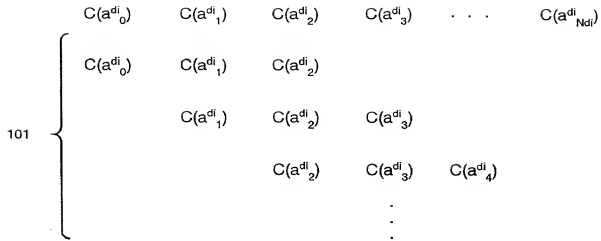


Fig. 3c

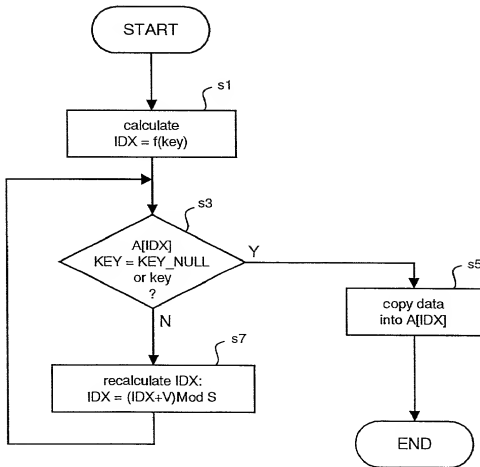


Fig. 4

| IDX | KEY | POINTER |
|-----|------------------|---------------------------------|
| 0 | $c_2 c_9 c_1$ | $n[2,15,4]; n[2,16,20] \dots$ |
| 1 | $c_5 c_3 c_6$ | $n[3,32,40]; n[15,10,22] \dots$ |
| 2 | $c_5 c_5 c_9$ | $n[8,14,20]; n[10,4,15] \dots$ |
| 3 | $c_3 c_6 c_1$ | $n[3,32,41]; n[4,14,3] \dots$ |
| 4 | KEY-NULL | |
| 5 | $c_8 c_3 c_1$ | $n[1,2,4]; n[3,10,4] \dots$ |
| 6 | $c_1 c_7 c_5$ | $n[2,1,12]; n[4,6,5] \dots$ |
| . | . | . |
| . | . | . |
| . | . | . |
| S-2 | $c_2 c_2 c_4$ | $n[3,1,15]; n[8,14,10] \dots$ |
| S-1 | $c_4 c_{10} c_3$ | $n[1,5,43]; n[7,13,11] \dots$ |

Fig. 5

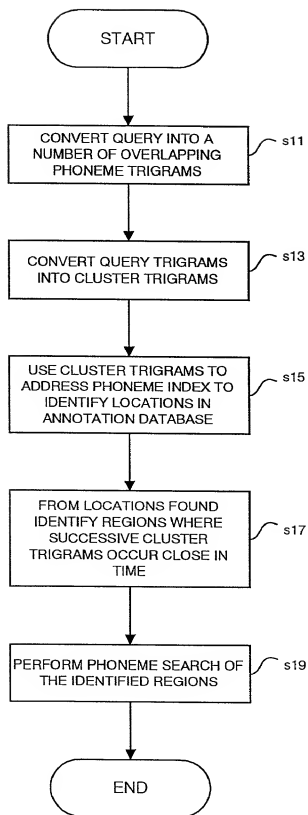


Fig. 6

$$q_0 \text{ --- } q_1 \text{ --- } q_2 \text{ --- } q_3 \text{ --- } q_4 \text{ --- } q_5$$

Fig. 7a

$$103 \left\{ \begin{array}{ccccccc} q_0 & & q_1 & & q_2 & & \\ & q_1 & & q_2 & & q_3 & \\ & & q_2 & & q_3 & & q_4 \\ & & & q_3 & & q_4 & q_5 \end{array} \right.$$

Fig. 7b

$$105 \left\{ \begin{array}{cccc} C(q_0) & C(q_1) & C(q_2) & \\ & C(q_1) & C(q_2) & C(q_3) \\ & & C(q_2) & C(q_3) & C(q_4) \\ & & & C(q_3) & C(q_4) & C(q_5) \end{array} \right.$$

Fig. 7c

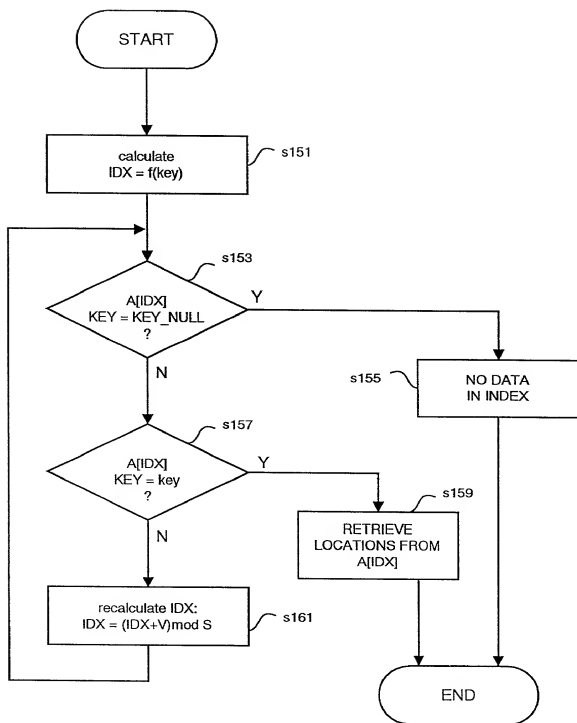
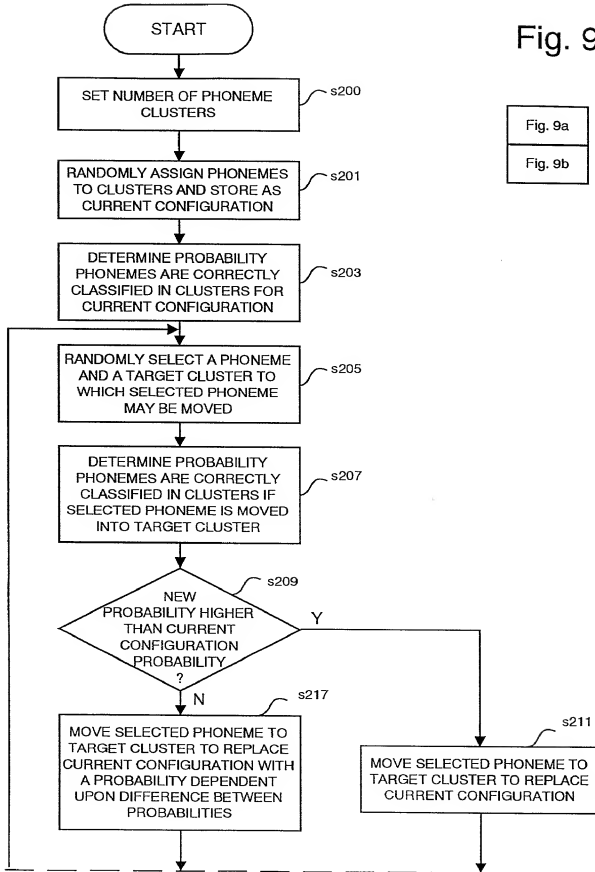


Fig. 8

Fig. 9a

Fig. 9a

Fig. 9b



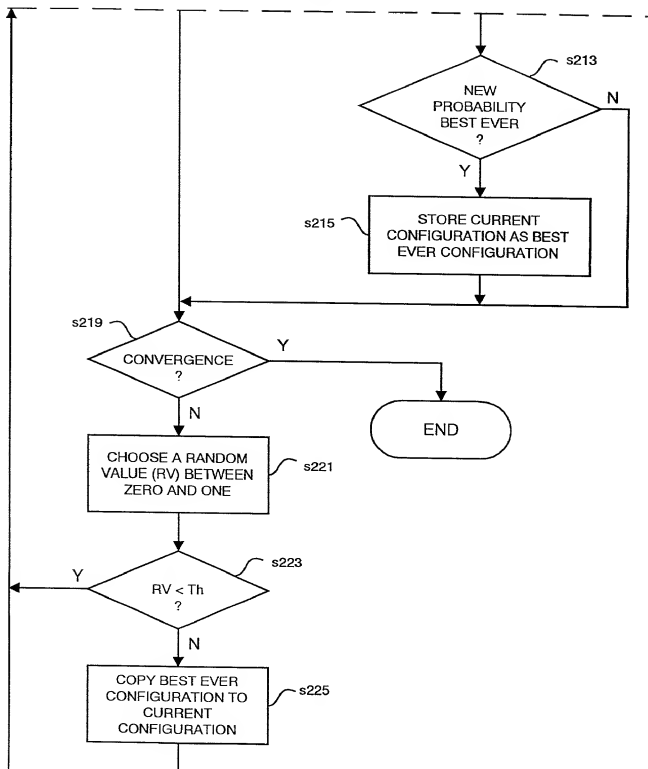
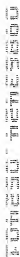


Fig. 9b



| Author | Year | Country | Sample Size | Study Design | Findings |
|----------------|------|-------------|-------------|-----------------|--|
| Smith et al. | 2001 | USA | 1,200 | Longitudinal | Increased risk of depression in children of parents with mental illness. |
| Johnson et al. | 2003 | UK | 800 | Cross-sectional | Family history of mental illness associated with higher rates of anxiety disorders. |
| Lee et al. | 2005 | Canada | 1,500 | Longitudinal | Genetic factors play a significant role in the development of bipolar disorder. |
| Wong et al. | 2007 | Australia | 900 | Cross-sectional | Family environment significantly influences the onset of schizophrenia. |
| Chen et al. | 2009 | China | 2,000 | Longitudinal | Genetic predisposition increases vulnerability to stress-related mental health issues. |
| Miller et al. | 2011 | USA | 1,100 | Cross-sectional | Family history of depression linked to higher levels of childhood trauma. |
| Nguyen et al. | 2013 | Vietnam | 700 | Longitudinal | Family structure and social support mediate the relationship between genetics and mental health. |
| Patel et al. | 2015 | India | 1,300 | Cross-sectional | Family history of mental illness associated with higher rates of substance use. |
| Kim et al. | 2017 | South Korea | 1,600 | Longitudinal | Genetic factors and family environment both contribute to the risk of adolescent depression. |
| White et al. | 2019 | USA | 1,400 | Cross-sectional | Family history of anxiety disorders linked to higher levels of childhood stress. |
| Green et al. | 2021 | UK | 1,800 | Longitudinal | Genetic factors and family environment both contribute to the risk of adult bipolar disorder. |

[illegible]